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Measuring and explaining policy paradigm change: the case of UK energy policy

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Corresponding Author:	Florian Kern University of Sussex Brighton, UNITED KINGDOM
First Author:	Florian Kern
Order of Authors:	Florian Kern
	Caroline Kuzemko
	Catherine Mitchell
Abstract:	This paper contributes to the literature on institutional change by creating a framework that both measures and explains policy change. The framework is then applied to UK energy policy from 2000 to 2012 and finds that a policy paradigm change has occurred. Contrary to expectations in the literature, however, the process of change has been informed by multiple narratives and the new governance system is complex and incoherent. The analysis also finds that there has been relatively little shift in how energy systems operate suggesting shortcomings in a conceptual focus on institutional change over outcomes.
Order of Authors Secondary Information:	

Introduction

It has long been argued that materialist explanations (i.e. focussing exclusively on interests) of policy-making and institutional change are limited and that concepts developed within the 'new' institutionalism may provide some extra explanatory depth (Blyth 2002; Fischer 2003; Widmaier et al 2007). The 'new' institutionalism, formed in the 1980s and 1990s as a response to rational choice and behaviouralism, sought to 'bring the state back in' to the explanation of political action (Peters 2005; Hall and Taylor 1996). Sociological and constructivist variants of new institutionalism have built upon Peter Hall's (1993) seminal work on policy paradigms in order to provide explanations of the role ideas play in policy and institutional change. These analyses proceed from the observation that frameworks of ideas colour not only how a policy problem is understood, but also policy choices and institutional structures (e.g. Niemelä and Saarinen 2012). Likewise, frameworks of ideas can also impact heavily upon processes of institutional change, often understood as happening during periods of crisis. Ideas and their expression in the form of narratives are understood as being capable of convincing groups within society that there is a crisis, that existing policy is failing to solve the crisis, and that alternative solutions should be pursued.

These recent analyses are particularly adept at explaining change, but potentially at the cost of conceptualising what exactly constitutes a policy paradigm shift or how we can measure whether or not one has taken place. The most precise measurements of what a paradigm shift would look like can be found in articles by Hall (1993) and Oliver and Pemberton (2004). Hall suggests that a policy paradigm shift has taken place only once the objectives and instruments of policy have been replaced by new ones, and Oliver and Pemberton add that these new institutions need then to become embedded for a true shift to have occurred.

The aim of this article is to build a framework for analysing paradigm change by drawing on this work whilst adding insights into explaining how and why change takes place from more constructivist variants of institutionalism. It thereby contributes to conceptualisations of crisis and change within sociological and constructivist new institutionalism. Empirically, the paper also contributes to recent debates about whether or not a paradigm shift has occurred in energy policy.

The paper proceeds across four sections. The next section develops the analytical framework and the second section applies the framework to UK energy policy developments from 2000 to 2011 to test its analytical purchase.[1] Energy policy in the UK is an important field to study policy paradigms for two reasons. First, policy paradigms are particularly influential in areas that are considered to be highly technical and require a body of specialist knowledge, such as energy policy (Hall 1993: 291). Furthermore, identifying significant changes to the UK energy policy paradigm is significant given that it has long been held up as a 'model' for other countries (IEA 2007). Second, there is a current debate about whether or not a policy paradigm shift is taking place within energy policy in the UK (see Mitchell 2008; Routledge 2010; Kuzemko 2013), and beyond (Helm 2005; Goldthau 2012). Within this debate it is also often noted that the evolving governance system is both highly complex and difficult to understand, not least in terms of what it might achieve (Keay 2012; cf. Rutledge 2010). The research draws on a systematic analysis of policy documents, including White Papers and strategy documents, and secondary literature. This data is complemented by twenty-eight semi-structured interviews with key stakeholders involved in UK energy policy-making over the last decade.[2]

[1] The analysis starts with the year 2000 and not in 1997, the year that New Labour came to power since The Utilities Act of 2000 marked the first legal change in energy policies.
[2] For a full list of those interviewed please see Appendix.

The third section argues that the suggested framework proved useful for analysing whether or not a policy paradigm change has occurred but also identifies a limitation of the framework: it has little to say about the impacts and outcomes of institutional changes. The paper concludes by suggesting that the policy paradigm literature should pay more attention to the outcomes of policy change, for example to the impacts of institutional changes on how the energy system operates.

Conceptualising Policy Paradigms and Change

Hall's (1993) original work on policy paradigms offers the starting point for analysis. He identifies a policy paradigm as a framework of ideas which influences the way in which policy is formulated in a given policy area. The framework of ideas influences the ways in which problems are perceived, and colours decisions about appropriate policy goals and which instruments are considered to be most acceptable in attaining these goals (Hall 1993: 278-9). As such Hall claims that policy-making can be understood as a process that involves an active and ongoing inter-relationship between the interpretive framework of ideas and levels of policy in the form of goals and instruments (1993: 278).

Hall refers to policy paradigms as sometimes 'taken for granted' or 'unamenable' to scrutiny (1993: 279) and other new institutionalists have built upon these observations when analysing ways in which interpretive frameworks can be embedded within institutions. Governance institutions, such as Departments, reflect and embody the interpretive framework as well as limit

the impact of alternative frameworks on policy (Hay and Wincott 1998; Yee 1996; Schmidt and Radælli 2004). As such the ways in which formal institutions are set up and maintained and the mandates to which they work can be understood as important aspects of how the interpretive framework influences policy objectives and instruments (Kuzemko 2013: 48-9).

To take better account of these ways in which ideas become embedded, policy paradigms are conceptualized here to include governance institutions, in addition to Hall's three levels outlined above. Thus a policy paradigm consists of four inter-related levels: 1) ideas about the subject and how it should be governed (interpretive framework), 2) policy goals, 3) policy instruments and 4) governance institutions. If significant changes can be identified which depart from existing practices on each level of the policy paradigm between two time periods, i.e. in this instance 2000 with 2011, then a policy paradigm shift can be claimed. This measurement would contrast with instances in which problems arise but small, ad hoc adjustments are made to only one or two levels (Hall 1993; Oliver and Pemberton 2004).

Hall's original definition of policy paradigm change suggested that it could take place through the method of social learning, but it had less to say about conditions under which institutional change takes place. Recent research within sociological variants of new institutionalism has concentrated on explaining processes of change, some of which emphasises the evolutionary aspects of profound change (Marsh 1999; Mahoney and Thelen 2010). Others, however, have suggested profound change as a more discontinuous event and have emphasised the role of crisis in punctuating policy evolution (Blyth 2002; Hay 2001; Widmaier et al 2007). It is at such times that it can be more convincingly argued that the existing policy paradigm is not providing acceptable outcomes, thereby allowing its credibility to be challenged and an alternative policy paradigm to be accepted and institutionalised (Hay 1996; Blyth 2002; Oliver

and Pemberton 2004). Crises have been interpreted, therefore, as moments of breakdown but also of possible political agency in the form of profound policy change (Hay 1996), or at least as creating conditions which enhance the possibility of challenge (Wilson 2001: 262).

Crises are, however, understood not as self-apparent phenomena but events that need to be narrated and explained as constituting a problem in order for attention to be focused on the policy area in question (Blyth 2002; Widmaier et al 2007). This is where one of the roles of narratives within the process of change can be highlighted as a successful crisis narrative will be able to establish the shared perception that a crisis exists across a range of actors. In addition to establishing material events as 'a crisis', the dominant crisis narrative must also offer important, credible explanations as to *why* events constitute a crisis as well as directly related solutions (Blyth 2002; Hay 2001; Stone 1989). This function is highly significant in that for paradigms to be superseded they must not only be perceived to be obsolescent but there must also be a credible, alternative interpretive framework and related policies to replace it (Hay 2001; Oliver and Pemberton 2004).

All this suggests, however, a quite linear process: events occur, they are widely perceived as constituting 'a crisis', existing policy is understood as incapable of addressing these problems, and a new policy paradigm replaces the old. This also suggests that one narrative must dominate the process both of establishing crisis and the new policy paradigm. Oliver and Pemberton, however, suggest a messier and less linear process of change that emphasises the battle between a range of different, competing crisis narratives (Oliver and Pemberton 2004). Albeit they also imply that, ultimately, the new policy paradigm will be established based on the arguments, ideas and solutions embodied within one alternative crisis narrative.

These sociological analyses of institutional change have had a great deal, therefore, to say about conditions under which change occurs and about the central role of crisis narratives in enabling change. Sociological analyses have, however, offered little precise definition of *what* needs to have occurred in order that a policy paradigm shift can be claimed. There are references to 'rejection' and 'replacement' of the old paradigm, but little direct measurement to show what has changed. By constructing a framework of analysis that both measures and explains change this paper hopes to provide a more rigorous assessment of the process of change.

Measuring and Explaining Change: UK Energy Policy 2000-2011

This first empirical section delineates the UK 'pro-market' energy policy paradigm (PEPP) in the year 2000 by providing a detailed description of each of the 4 levels (cf. Kuzemko 2013). This is in line with other characterisations of UK energy policy at this point in time (Mitchell 2008; Rutledge 2007; Scrase et al 2009). It then goes on to highlight the principal alternative narrative, climate change, which presented a challenge to the PEPP and the ways in which the paradigm both acknowledged but also managed to compromise these arguments. The second subsection introduces a further challenge to the dominant paradigm in the form of a geopolitically informed narrative of security of supply crisis. The last subsection analyses the ways in which climate change and geopolitical narratives came together to allow actors to demonstrate the failure of existing policies and offer solutions, ultimately leading to a policy paradigm change as measured by the framework applied here.

The Pro-market Energy Policy Paradigm and the Climate Challenge: 2000-2003

In terms of the first level of the PEPP, the *interpretative framework* guiding policy making, energy was understood as a 'normal' tradable commodity and the market was seen as the most efficient vehicle for energy supply (Lawson 1989: 23). The role of the state was simply to create and maintain a level playing field open to competitive forces by establishing and enforcing fair market rules. Decisions about investment, fuel sources and fuel mix were left to market players. This interpretive framework fitted well within the overall approach of less state involvement in the economy that had dominated elite UK circles since the 1980s (Rutledge 2007).

In terms of the *goals* of energy policy the PEPP's principal aim was to establish and maintain a competitive, freely trading energy market, and this would ensure other important outcomes such as energy security and affordability (Rutledge 2007; Kuzemko 2012). This is not to say that security and affordability objectives did not exist, just that they were understood to be natural outcomes of freely trading, competitive markets (DTI 2000: 7). There were ambitions that 10% of electricity should be supplied by renewable sources by 2010 but these had not been formalised as objectives of policy (Mitchell and Connor 2004: 1937).

Under the PEPP the principal *instruments* of achieving this objective had been centred initially around the long process of privatising and deregulating the sector, and later around the construction of a new regulatory framework which would effectively "steer towards a defined general direction... [but] leave it to the market to select the means to reach that end" (Mitchell 2008: 1). Electricity prices were regulated via the RPI-X formula whereby electricity companies could make the greatest profits through cost cutting, and utilising existing assets, with little incentive to reinvest.

Lastly, in terms of the fourth level, *governance institutions*, energy policy was relegated to a subdivision of the Department of Trade and Industry (DTI) after the Department of Energy was

disbanded in 1992. The DTI should maintain the regulatory framework but responsibility for implementation rested with the independent regulator, Ofgem (Office of the Gas and Electricity Markets). Formal mandates for both these organisations were centred on maintaining competitive markets and ensuring fair treatment for consumers (Ofgem 2006: 107).

As a result private energy companies, in particular the big six electricity suppliers, became central to the supply of energy. This inferred a particular set of power relations between the non-interfering state and the private sector in energy whereby dominant market players had a high degree of influence in policymaking circles. Energy companies were incentivised, furthermore, to be cost efficient, to utilise assets, such as oil and gas from the North Sea, at a high rate, but not to think about or act in terms of the sustainability of the UK's national energy system.

[table 1: The Pro-Market Energy Policy Paradigm in 2000 here]

However, from the late 1990s onwards the PEPP was being challenged by a coalition of actors who argued not only that a long-term, global climate change crisis existed but that Government needed to take a more hands on approach in energy policymaking in order to avert this crisis. They offered a range of solutions and specific ways in which government could become more involved in establishing an environmentally sustainable energy system (RCEP 2001; Greenpeace 2006; Scrase and MacKerron 2009). For example, in 2002 a full Energy Review was carried out, by the Performance and Innovation Unit (PIU), which represented a direct challenge to the PEPP. This was not least in that it suggested that there should be new and specific climate change and renewable energy objectives for *energy* policy. It also pointed out that a system of 'trade-offs' should be established whereby carbon reduction objectives would trump others:

"…(e)nergy policy trade-offs affecting the period to 2012 should generally give priority to carbon reduction if there is a material risk of failing to meet internationally-agreed emissions targets" (PIU 2002: 52).

However, these challenges resulted in limited changes to the four levels of the PEPP. The trade-offs recommended in the PIU were by-passed in the new 2003 Energy White Paper. In addition, although for the first time energy policy was set towards achieving a formal climate change *goal* it was phrased in a rather non-specific way: "…to put ourselves *on a path* to cut the UK's carbon dioxide emissions… by *some* 60% from current levels by *about* 2050" (DTI 2003: 11).[3] As such this new objective appeared vague, more like an 'aim' than a firm commitment, and was not taken as fixed within the energy division of the DTI and Ofgem (Interviews 5 and 15). In terms of *governance institutions*, while the Energy Review had proposed a new government department responsible for climate and energy policy-making functions (PIU 2002: 144), the White Paper overtly rejected changes in government institutions in that they wanted "to concentrate…energies on following through the commitments we have made, not on creating new machinery" (DTI 2003: 112). The *interpretive framework* showed the least amount of change in that policy makers continued to believe in the ability of competitive, liberalised markets to meet policy objectives, including reducing carbon emissions, energy affordability and energy security (cf. Interviews 1, 2, 3 and 4; DTI 2003: 11 and 15). The 2003 White Paper also included an overtly benign interpretation of the international context for energy, despite acknowledging the UK's imminent reversal from net exporter to importer of oil and gas as well as the sharply growing demand from India and China.

There was some change in policy *instruments* but nothing that represented a particular shift in the overall pro-market orientation. For example, a new Renewable Obligation (RO) was

[3] Italics authors' own.

introduced in 2001 that placed an obligation on electricity suppliers to source a certain percentage of their electricity from renewable energy (Mitchell and Connor 2004). It was explicitly designed so that the government only specifies the target, but the obligation certificates are tradable and companies choose the cheapest technologies to achieve the target. The RO was therefore well aligned with the pro-market paradigm.

As such, although actors had mounted a significant challenge based on climate narratives arguing not only that a sustainable energy crisis existed but also that the PEPP needed to alter to address this problem, little change ensued to any of the four levels. As such the PEPP showed quite high degrees of path dependency whilst also appearing to respond to mounting challenges from climate change narratives. As will be seen below these arguments did, however, persist and ad hoc changes to the paradigm had already started to undermine the intellectual coherence of the PEPP.

The Security of Supply Crisis: 2004-2007

Various events had already started to focus some attention on energy security, such as the Truckers Strike of 2000 in Britain and the many major network failures around the turn of the Millennium, for example in New Zealand, Italy and the US. In direct contrast to benign perceptions of the international energy context referenced in the 2003 White Paper, a new challenge for the PEPP emerged around the mid-2000s when a geopolitically informed narrative about security of energy supply gained prominence.

By the end of 2006 political perceptions about energy supplies in the UK and across Europe started to shift significantly in the wake of growing state involvement in the Russian energy sector, the Russo-Ukrainian gas transit dispute and rising energy prices (Barton et al

2004; Light 2006). Fears about Russia's ability to affect energy trade and prices fuelled a great degree of political interest and fears about being dependent on unstable foreign suppliers mounted (EC 2006; Fox 2006; House of Commons 2007a). Newspapers were replete with terminology evocative of the Western Cold War mentality suggesting that Russia was fast becoming an 'energy superpower' and reminding importer nations of their hydrocarbon 'dependency' status (see for example Robinson 2006; Ostrovsky 2006). Such interests were reflected in academia and a new 'Journal of Energy Security' was established in 2008.[4]

The timing could not have been worse given the UK's shifting import-export position (Blair in DTI 2006a). The ensuing crisis debate was similar in tone and scale to UK oil crises debates of the 1970s and marked the start of a significant re-politicisation of energy (DTI 2007; House of Commons 2006). This paper argues that it was the *nature* of this narrative, and the publically perceived threat to UK *national* energy security, that resulted in renewed political interest in and deliberation of energy and the problems it faced.

All this represented the "highly politicised and public debate" that is claimed to accompany paradigm shifts (Hay 2001: 200). It appears as if the emergence of this narrative claiming a *near-term* threat to *UK* energy security evoked a higher degree of political interest than the climate narrative of long-term, global crisis. Energy governance was increasingly understood to merit more direct Government deliberation and this resulted in a range of new policy documents (see in particular DTI 2006a, 2006b; 2006c and 2007; JESS 2006). In 2006 another Energy Review was conducted which now referred to energy security as being one of two 'immense' challenges facing energy policy, and in the same year Tony Blair used his annual Lord Mayor's speech to highlight energy security concerns (DTI 2006a: 4). Interviewees within

[4] See: http://www.ensec.org/.

Ofgem and DECC have suggested that direct political pressure was being brought to bear at this time to 'do something' about energy security (cf. Interview 15).

In terms of discernible change in the four levels of the UK energy policy paradigm, what stands out most at this stage is the genuine shift in *goals*. While creating competitive markets had been the primary goal of energy policy up until this point, ensuring energy security started to supersede this objective (DTI 2006a: 4). Policy *instruments* were also showing signs of change, particularly in that more decisions about energy mix were being made – albeit somewhat covertly. There was a significant refocus on facilitating production of domestic supplies of energy, including nuclear, coal and oil and gas, to avoid imports and maintain a level of energy independence (DTI 2006a; House of Commons 2007a).

An interesting juxtaposition emerges here. Although geopolitically informed narratives had come to dominate energy debates, and had resulted in greater political attention to energy, understandings of supply security were not openly understood to challenge ideas about markets and competition. Blame for supply insecurity was placed instead on the unstable foreign supplies, not on the structures of the PEPP. Therefore, at this stage an important element of the process of policy paradigm shift identified above, a challenge of the *interpretive framework* through mounting evidence of policy failure, was missing. There were only very limited changes in *governance institutions*. Some procedures were put in place that committed DTI and Ofgem to regular reports to Parliament on energy security (HM Government 2004) and the 2007 White Paper announced for the first time "an integrated international energy strategy which describes the action we are taking to help deliver secure energy supplies and tackle climate change" (DTI 2007: 8).

During this period geopolitically informed energy security narratives managed to establish a widespread perception that an energy crisis existed, using evocative language to focus public and political attention. This narrative had both repoliticised energy as well as generated a high degree of political response outside of energy governance institutions. Given the limited changes to the PEPP, however, it cannot be claimed that this narrative had, on its own, resulted in a policy paradigm change.

Accumulation of Changes: 2008-2011

This section observes that climate narratives, given the ongoing repoliticisation of energy, managed to provide the evidence of failure of existing policy missing in geopolitical security narratives. A newly emerging energy-security-climate narrative, combining elements of geopolitical and climate narratives, became effective in providing impetus for a policy paradigm change in a way that neither of the two narratives had managed on their own.

By the late 2000s, results in terms of reducing carbon dioxide emissions were deteriorating, particularly as the 'easy gains' from the switch in electricity production from coal to gas in the 1990s were past (Carbon Trust 2006; Greenpeace 2006). Climate analysts and advocacy groups were providing empirical evidence that energy policy was not delivering on carbon dioxide reductions and renewable energy technology deployment (World Wildlife Fund 2006; House of Commons 2007b). These results were problematic given overt claims made in the early 2000s, in response to climate challenges to the PEPP, that markets would deliver. Several high profile reports from credible institutions started to suggest that the UK Government should play a more active role in developing and deploying low carbon technologies (Stern 2006; IEA 2007). Academics also increasingly argued for more Government leadership and investment in research, development, demonstration and deployment of new energy technologies (e.g.

Foxon et al. 2005; Sauter and Watson 2007). Importantly, pressure increased after the adoption of the EU 20-20-20 targets in 2009 (Directive 2009/28/EC) which meant that the UK was now committed to sourcing 15% of all energy from renewables by 2020.

Climate groups, think tanks, and some academics started to actively utilise fears about dependency on 'unstable' foreign suppliers and renewed interest in boosting energy independence and argued that the UK needed to focus on increasing its domestic energy production (Interview 18; Giddens 2009; Bird 2007). One example is a report for Greenpeace entitled 'Oil and Peace Don't Mix' which overtly used geopolitical ideas about unstable suppliers, conflict and the need to increase independence to argue for greater state commitment to renewable energy (Greenpeace 2006). The argument here is that some climate groups strategically changed their narrative because they understood aspects of the geopolitical narrative to be capable of evoking political reaction (Interview 18).

Given mounting evidence of policy failure, claims repeatedly made by the DTI and Ofgem that markets and competition would deliver on renewable energy and energy efficiency were looking increasingly less credible. Tendencies to rely on market instruments could be more credibly identified as part of the problem (Scrase et al 2009: 6). As such the PEPP became increasingly vulnerable to challenge and political contestation. Actors brought together climate change and geopolitical narratives to argue that a nationally relevant crisis does exist, that UK policy needs to change, and provided potential solutions in terms of a more active role for the state.

By the late 2000s Government was starting to more actively look for ways to address these mounting pressures. The Climate Change Act of 2008 was one of the first outcomes of this re-think of energy policy (HM Government 2008a). This Act was held up as being the first of its

kind in the world in that it set legally binding carbon dioxide reduction targets up until 2050 of at least 80% (Watson 2009: 34). It was understood that "…(t)urning to renewables will help the UK recover some of its energy self-sufficiency" (DECC 2009b: 10), and as such domestically produced renewables became an answer to both climate change and energy security objectives. This marked a clear departure from PEPP *goals*.

The UK Government had also started to make some substantial changes to its *governance institutions*, not least the establishment of the Department for Energy and Climate Change (DECC) in 2008. The setup of DECC reflects the understanding "…that climate change and energy policies are inextricably linked…" (DECC 2011a). This change is also significant in that it both promoted energy back up to Cabinet Level as well as mandating DECC to achieve specific climate and energy goals. Whilst Ofgem's duty to contribute to the achievement of sustainable development had already been introduced in 2004, the 2008 Energy Act promoted this duty placing it on an equal footing with other objectives (HM Government 2008b). A new 'Office for Renewable Energy Deployment' (ORED) was established within DECC to ensure that the UK would deliver on its new renewable targets (DECC 2009b: 9). The independent Committee on Climate Change (CCC) was also established to advise on and monitor progress towards achieving a lower carbon economy (House of Commons 2007b: 3).

The challenge to the PEPP from the energy security-climate narrative also led to changes in the *interpretive framework* of policy makers. The 2009 report on the UK's energy security regularly referenced the need for 'home grown', renewable energy in order to provide for both energy and climate security (Wicks 2009). This not only shows the energy security-climate narrative's infiltration into government documents but it likewise emphasises the role that renewables were now to play. Another clear change in the interpretative framework was the

emerging stance on state-market roles in energy (cf. Miliband 2008; Wicks 2009). The new understanding of energy policy did not wholesale reject the previous paradigm in that it still recognised the many abilities of 'the market' to supply energy. But it did suggest a 'strategic role for government' in response to market failures and that a national policy was needed to provide incentives for the public good (Miliband 2008: 4). Malcolm Wicks' report on energy security suggested that "…the era of heavy reliance on companies, competition and liberalisation must be re-assessed" (2009: 1). What also emerged at this stage was recognition of energy's fundamental socio-economic role for society, as opposed to notions of energy as replaceable commodity popular under the PEPP (DECC 2009c).

These changes manifested themselves in a number of policy documents and new policy *instruments*. There emerged over the course of a few years a considerable upsurge in policy documents, White Papers, and legislation (HM Government 2008a and 2008b; DECC 2009a and 2009b; BIS and DECC 2009; DECC 2010). Many of these documents, including 'The UK Low Carbon Transition Plan' and the 'Renewable Energy Strategy', overtly recognised the need for policy change (DECC 2009a and 2009b), albeit in the latter case, encouraged by Europe. The 'Renewable Energy Strategy' "…put in place mechanisms to provide financial support for renewable electricity and heat worth around £30bn between now and 2020" (DECC 2009b: 8). DECC also announced their intention to directly fund four large scale carbon capture and storage demonstration plants, to channel about £3.2bn to help households become more energy efficient, to roll out smart meters in every home by the end of 2020 and to provide further state investment in offshore wind (DECC 2009a: 4). The RO was amended such that it was 'banded' (providing differing levels of support for different technologies) and could, therefore, no longer be understood as a technology-neutral instrument. Another significant change in terms of

instruments was the introduction of a 'feed-in-tariff' (FiT) in April 2010 aimed at incentivising small-scale renewable energy production (DECC 2009b: 8).

On top of these new instruments, the Government also later embarked on a major revision of the energy market through the electricity market reform package. The draft Energy Bill of May 2012 includes suggestions for a number of mechanisms, including contracts for differences, capacity payments, emission performance standard, carbon floor price, to incentivise investment in low carbon electricity generation. Much of this new legislation represented a significant shift away from the previous reliance on market-based instruments for achieving energy policy objectives (Foxon 2012; Pearson and Watson 2012; DECC 2012).

Given the accumulation of changes witnessed in this last period it can be observed, using the framework applied here, that each level of the PEPP had shifted from its position in 2000. These changes are summarised in Table 2 below and together suggest that a policy paradigm shift in UK energy policy can be identified.

[Table 2: The Energy Policy Paradigm in 2000 and 2011 here]

Discussion

It is worth at this point briefly posing some questions with regard to the key insights gained from the application of this framework, as well as any gaps remaining. There are two principle points to be made here. Firstly, our observations about the influence of two different narratives within the process of change have allowed us to identify the new energy governance system not as one coherent, alternative energy policy paradigm but as based upon multiple perspectives on energy. These are evident in the new *goals* for energy policy, in some of the *instruments* now chosen and

in the new *governance institutions* established. Although the *interpretive framework* has altered to include climate change and geopolitical ideas, elements of belief in market ideas continue to persist alongside. Examples of the persistence of these ideas are the continued support for the EU ETS scheme to help drive emission reductions in the power sector and the central role for private actors in delivering UK energy supplies and services. Pro-market ideas about fiscal austerity and limited state intervention are also arguably influential over the Treasury's recent attempts to limit further funding for renewable energy. By identifying that the new system has 'picked and mixed' between perspectives on energy and how energy should be governed, this paper has been able to explain *why* the current governance system is so complex and difficult to understand (Keay 2012).

The mixed nature of the new paradigm also means that assumptions are being made about the compatibility of policy goals, for example that energy security, affordability and climate objectives will be met using a mix of policy instruments. This assumption does not recognise, nor overtly address, the question of potential trade-offs between goals nor does it take account of the different perspectives to which they relate. The relative importance of different policy goals appears to be contested between the Coalition government partners and across different departments. For example, energy poverty objectives appear to be under pressure given decisions to pass most costs of low carbon energy on to consumers. The impact on affordability, a subject of growing political relevance, is likely to be considerable – already energy poverty numbers are escalating despite the objective of eradicating it by 2016 (DECC 2011b).

The suggested framework has, therefore, proved useful for analysing whether or not a policy paradigm change has occurred and for revealing potential tensions within the current policy paradigm but there is one key limitation of the framework. While analytical emphasis has

been placed on the policy goals, instruments, interpretative frameworks and governance institutions, it has had less to say about whether or not institutional changes actually impact how current energy systems operate. This raises questions about whether the new paradigm will be able to deliver on the new goals or whether it will have to shift again in order to do so.

For example, while all of the changes observed here together amount to a policy paradigm change, it can also be argued that during the period of analysis relatively little changed in terms of the characteristics of the energy system. Government ambitions that 10% of electricity should be supplied by renewable sources by 2010 were missed, with only 6.5% of electricity produced from renewable sources in that year. Results elsewhere indicate that the UK is not on track to achieve the 15% renewable target for 2020. The principal actors providing electricity services have also changed little. For example, only 0.3% of electricity supply in 2010 was provided from suppliers other than the big six utilities, who continue to dominate electricity markets. This is of concern because recent, socio-technical analyses of energy transitions argue that system change, such as the one required to move to a secure and low carbon future, is often driven by new entrants and innovators rather than incumbent industry actors (Rotmans et al. 2001; Loorbach 2007; Rotmans and Loorbach 2008). Arguably the continued ability of the big six utilities to influence policy based on their dominant market position and their key role in implementing government policy has important implications for achieving the goals of UK energy policy. As such, the framework applied in this paper has told us relatively little about the ways in which policy changes impact important outcomes on the ground. Without including wider impacts on the energy system in the analysis it is difficult to assess whether new policies are sufficient to meet objectives.

Conclusions

Based on the analysis presented above it is evident that the PEPP has changed quite substantially on every level outlined in our theoretical framework. This is clearly a significant finding in itself, but it is in terms of understanding how and why change has taken place that the subtleties of the process come to light. By considering the role of narratives in the three eras of change we have been able to understand more about change and about the new paradigm. Although in the 2000 to 2003 period climate change narratives offered a range of direct challenges to the PEPP, these were successfully compromised away with claims that the existing paradigm could deliver a low carbon future. Events took a different turn in the mid-2000s when geopolitically informed arguments about security of supply problems, partly in response to Russian resource nationalism, highlighted energy as an area in crisis. This served to open up energy policy to a crisis debate across public, media, academic and political circles but by emphasising the fault of others provided less of a challenge to policies in place. Within the context of the crisis debate, however, evidence of policy failure not just to deliver on energy security but also on climate objectives gained prominence. As such, two initially separate narratives together performed central functions within the process of change despite the fact that one did not defeat the other to become the dominant narrative. In fact, it is in combination that they appeared most powerful to influence change.

This finding runs contrary to assumptions within sociological institutionalism whereby one narrative comes to dominate interpretations of crisis and then eventually replaces the incumbent policy paradigm. The identification of more than one narrative as influential in change provides explanatory detail not only of a messier and more contingent process of change (cf. Oliver and Pemberton 2004) but also about the structure of the new paradigm. Given that geopolitical and

climate ideas have both underpinned the process of change and that some market ideas and structures persist, the new paradigm is highly complex and also contains a variety of internal tensions.

The paper also identified a key shortcoming of the analytical framework. Whilst being adept at explaining policy paradigm change, it sheds little light on whether or not changes have achieved much 'on the ground'. In terms of taking this analysis forward we propose that one way of remedying this situation would be to extend the analytical framework to include a fifth level which would include impacts of these changes on actors and their behaviour. The emerging literature on socio-technical transitions might serve as a useful complement to this analysis of policy paradigm change. This literature identifies policy and institutions as important within wider systemic change processes (Kern 2011; 2012) but pays more attention to the characteristics of the socio-technical system itself: the actors involved, the technologies they use, the user demands, and the physical infrastructures (Geels 2002). In combining insights from socio-technical literatures we would seek to maintain the in-depth insights into political complexities gleaned from institutional analysis whilst also including other characteristics of the socio-technical system within processes of transitions.

In summary, the paper makes three contributions to theory in the 'new' institutionalism literature: First, it developed a framework for both measuring and explaining paradigm change building on historical, sociological and constructivist variants of new institutionalism. Second, it challenged the assumption with sociological institutionalism that one narrative comes to dominate interpretations of crisis and eventually replaces the incumbent paradigm. Third, it points to limitations of the paradigm framework in terms of neglecting 'changes on the ground' and suggests that the literature on socio-technical transitions might help to address this issue.

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Interview 2: BERR, Strategic Analysis Unit, December 2008

Interview 3: Foreign and Commonwealth Office (FCO), Analyst, January 2008

Interview 4: FCO, Analyst, August 2010

Interview 5: Department of Energy and Climate Change (DECC), International Energy team, September 2010

Interview 6: FCO Moscow, Second Secretary, September 2008

Interview 7: Former Energy Advisor to President Putin, September 2008

Interview 8: Wintershall, Moscow, Head of Representation, September 2008

Interview 9: Deloitte, Moscow, Managing Partner, September 2008

Interview 10: Standard Chartered, Moscow, Managing Partner, September 2008

Interview 11: CERA, Founder and Consultant, December 2007

Interview 12: OXERA, Principal, August 2010

Interview 13: Member of 2002 PIU Energy Review team, September 2010

Interview 14: Member of 2002 PIU Energy Review team, February 2011

Interview 15: Ofgem, January 2011

Interview 16: DECC, International Energy Security Review team, January 2011

Interview 17: Qatar National Oil and Gas, Head of International Marketing, December 2009

Interview 18: Worldwatch, Director, Energy and Climate Program, May 2011

Interview 19: FCO, former analyst, August 2011

Interview 20: Former Head of Policy Planning in 10 Downing Street and Senior Policy Adviser

Interview 21: Senior civil servant at BERR, February 2008

Interview 22: Senior civil servant at DEFRA, February 2008

Interview 23: Former member of Advisory Committee on Business and the Environment (ACBE), January 2008

Interview 24: Lecturer in renewable energy policy, February 2008

Interview 25: Former senior manager Carbon Trust, March 2008

Interview 26: Former senior civil servant at DETR/DEFRA, March 2008

Interview 27: Senior civil servant at BERR, February 2008

Interview 28: Senior manager Carbon Trust, February 2008

Table 1: The Pro-Market Energy Policy Paradigm in 2000

Level	**Description**
Interpretive framework	- energy as tradable commodity - markets as most efficient vehicle for energy trade and supply - government should not supply energy, nor decide energy mix - energy to be traded and supplied in an economically efficient manner through competitive, freely trading markets - free markets understood as delivering energy security
Objectives of Policy	- the provision of secure, diverse and sustainable supplies of energy at competitive prices as an outcome of freely trading, competitive markets
Instruments	- regulatory framework designed to enhance ability of markets to supply energy at lowest cost - electricity pricing according to RPI-X formula - renewables obligation being developed to support renewable energy
Governance Institutions	- Department of Energy had been disbanded in 1992 - responsibility for policy at subdivision of Department of Trade and Industry (DTI) - Ofgem key player: regulator to oversee markets to ensure low prices for consumers

Table 2: The Energy Policy Paradigm in 2000 and 2011

Level	2000	2011
Interpretive framework	- energy as tradable commodity - markets as most efficient vehicle for energy trade and supply - government should not supply energy, nor decide energy mix - energy to be traded and supplied in an economically efficient manner through competitive, freely trading markets - free markets understood as delivering energy security	- energy is understood to have a central socio-economic role to play rather than understood as a normal commodity - markets to supply energy but within tighter government specifications - market failure in climate and energy requires a relative change in the role of the state - more energy should be 'home grown' and should come from clean sources
Objectives of Policy	- the provision of secure, diverse and sustainable supplies of energy at competitive prices as an outcome of freely trading, competitive markets	- energy security, including affordability, one of two primary objectives - climate change mitigation goals now legally binding through Climate Change Act (and specific to include precise level of emissions reductions) - increasing share of renewable energy now formal objective of policy - Affordability objectives somewhat sidelined
Instruments	- Regulatory framework designed to enhance ability of markets to supply energy at lowest cost - electricity pricing according to RPI-X formula - renewables obligation being developed to support renewable energy	- variety of instruments put in place to facilitate more domestic energy production - FIT introduced for small-scale generation of renewable electricity - introduction and banding of renewables obligation - electricity market reform
Governance Institutions	- Department of Energy had been disbanded in 1992 - responsibility for energy policy at subdivision of Department of Trade and Industry (DTI) - Ofgem key player: regulator to oversee markets to ensure low prices for consumers	- Creation of DECC with specific energy security and climate mandates - Other new institutions including the CCC and the Office for Renewable Energy Deployment - New energy and climate division within the FCO - Ofgem mandate changed to include sustainability